

Amendments to the Claims:

Please amend the claims as shown below in the Listing of Claims. This Listing of Claims will replace prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) An image-processing apparatus which expresses images as bit map data having a latent image area and a background area in order to discourage illegal copying of images, the image-processing apparatus comprising:

an image generator which generates a new image by expressing the latent image area with dots of a first dot size and the background area with dots of a second dot size which is ~~different~~ larger from the first dot size; and

an information-attaching unit which receives additional information capable of distinguishing an original image from a copy,

wherein the information-attaching unit then attaches the additional information to at least the latent image area of the image generated by the image generator.

2. (currently amended) An image-processing apparatus according to Claim 1, wherein the image generator ~~sets the first dot size smaller than the second dot size and~~ sets intervals between the dots in the latent image area smaller than intervals between the dots in the background area.

3. (original) An image-processing apparatus according to Claim 1, wherein each of the dots includes two or more pixels.

4. (original) An image-processing apparatus according to Claim 1, wherein the information-attaching unit controls the position of each of the dots included in the latent image area in accordance with a bit value at the corresponding bit position in the additional information.

5. (original) An image-processing apparatus according to Claim 1, wherein the information-attaching unit controls the size of each of the dots included in the latent image area in accordance with a bit value at the corresponding bit position in the additional information.

6. (original) An image-processing apparatus according to Claim 1, further comprising a composite-image generator which generates a composite image of the image generated by the image generator and a document image.

7. (currently amended) An image-processing method for processing an image including a latent image area and a background area, the image-processing method comprising:

an image-generating step of generating a new image by expressing the latent image area with dots of a first dot size and the background area with dots of a second dot size which is ~~different~~ larger from the first dot size; and

an information-attaching step of attaching additional information to at least the latent image area of the image generated in the image-generating step.

8. (currently amended) An image-processing method according to Claim 7, wherein, in the image-generating step, ~~the first dot size is set smaller than the second dot size and~~ intervals between the dots in the latent image area are set smaller than intervals between the dots in the background area.

9. (original) An image-processing method according to Claim 7, wherein, in the information-attaching step, the position of each of the dots included in the latent image area is controlled in accordance with a bit value at the corresponding bit position in the additional information.

10. (original) An image-processing method according to Claim 7, wherein, in the information-attaching step, the size of each of the dots included in the latent image

area is controlled in accordance with a bit value at the corresponding bit position in the additional information.

11. (original) An image-processing method according to Claim 7, further comprising a composite-image-generating step of generating a composite image of the image generated in the image-generating step and a document image.

12. (currently amended) An image-processing apparatus which processes an image including a latent image area and a background area, the image-processing apparatus comprising:

an image generator which generates a new image by expressing the latent image area with dots of a first dot size and the background area with dots of a second dot size which is ~~different~~ larger from the first dot size; and

an information-attaching unit which attaches additional information to the latent image area and/or the background area of the image generated by the image generator,

wherein the information-attaching unit controls the position or the size of each of the dots included in the latent image area and/or the background area in accordance with a bit value at the corresponding bit position in the additional information.

13. (currently amended) An image-processing apparatus according to Claim 12, wherein the image generator ~~sets the first dot size smaller than the second dot size and~~ sets intervals between the dots in the latent image area smaller than intervals between the dots in the background area.

14. (original) An image-processing apparatus according to Claim 12, wherein each of the dots includes two or more pixels.

15. (original) An image-processing apparatus according to Claim 12, further comprising a composite-image generator which generates a composite image of the image generated by the image generator and a document image.

16. (currently amended) An image-processing method for processing an image including a latent image area and a background area, the image-processing method comprising:

an image-generating step of generating a new image by expressing the latent image area with dots of a first dot size and the background area with dots of a second dot size which is ~~different~~ larger from the first dot size; and

an information-attaching step of attaching additional information to the latent image area and/or the background area of the image generated in the image-generating step,

wherein, in the information-attaching step, the position or the size of each of the dots included in the latent image area and/or the background area is controlled in accordance with a bit value at the corresponding bit position in the additional information.

17. (currently amended) A computer program on a computer readable medium including computer-executable instructions for causing a computer to execute the image-processing method according to Claim 7.

18. (currently amended) A computer program on a computer readable medium including computer-executable instructions for causing a computer to execute the image-processing method according to Claim 16.

19. (original) A computer-readable storage medium which stores the program according to Claim 17.

20. (original) A computer-readable storage medium which stores the program according to Claim 18.

21-26. (cancelled)

27. (original) A method for determining whether an image is an original or copy, the method comprising:

a receiving step of receiving the image having a first region that is reproducible when it is copied and a second region that is not reproducible when copied;

~~wherein the first region is reproducible when it is copied and the second region is not reproducible when copied;~~

an extracting step of examining either the first region or the second region to extracting embedded information that indicates whether the image is a copy or an original; and

~~comparing, if the embedded information is extracted, the embedded information with authentication information to determine that the image is original;~~
determining step of determining whether the image is a copy or an original based on a result of the extracting step.

28-29. (cancelled)

30. (original) The method of Claim 27 wherein the embedded information is attached to the first and the second region.

31. (cancelled)

32. (original) The method of Claim 27 wherein the embedded information is a random bit string.

33. (original) The method of Claim 27 wherein the embedded information is a digital signature of textual information.

34. (original) The method of Claim 27 further comprising,
expressing the first region with a plurality of dots of a first size; and
expressing the second region with a plurality of dots of a second size.

35. (original) The method of Claim 34 further comprising,
attaching the embedded information based on a displacement of the plurality of
dots in the first region and based on first predetermined rules.

36. (original) The method of Claim 34 further comprising,
attaching the embedded information based on a displacement of the plurality of
dots in the first region and based on second predetermined rules.

37. (original) The method of Claim 34, wherein intervals between the dots in the
first region are set smaller than intervals between the dots in the second region.

38. (original) The method of Claim 34 further comprising,
attaching the embedded information based on a displacement of the plurality of
dots in the second region and based on first predetermined rules.

39. (original) The method of Claim 34 further comprising,
attaching the embedded information based on a displacement of the plurality of
dots in the second region and based on second predetermined rules.

40. (original) The method of Claim 34 further comprising,
attaching the embedded information based on an arrangement of the plurality of
dots and on first predetermined rules.

41. (new) The method of Claim 27, wherein the determining step determines that
the image is an original if the embedded information can be extracted.

42. (new) The method of Claim 27, wherein the determining step determines that
the image is a copy if the embedded information cannot be extracted.

43. (new) The method of Claim 27, further comprising a comparing step of comparing the embedded information with authentication information to determine that the image is an original if the embedded information is extracted.

44. (new) A computer program on a computer readable medium including computer-executable instructions for causing a computer to execute the image-processing method according to Claim 27.

45. (new) A computer-readable storage medium which stores the program according to Claim 44.

46. (new) An image-processing apparatus for determining whether an image is an original or copy, the image-processing apparatus comprising:

a receiving unit which receives the image which has a first region that is reproducible when it is copied and a second region that is not reproducible when copied;

an extractor which extracts embedded information that indicates whether the image is a copy or an original; and

a determiner that determines whether the image is a copy or an original based on a result from the extractor.

47. (new) An image-processing apparatus of which images having a first region and a second region in order to discourage illegal copying of images, the image-processing apparatus comprising:

an image generator which generates an image having a first region which is reproducible when it is copied and a second region which is not reproducible when it is copied; and

an information-attaching unit which receives additional information capable of distinguishing an original image from a copy, and attaches the additional information to at least the second region of the image generated by the image generator.

48 (new) A method for determining whether an image is a copy or an original, the method comprising:

a receiving step of receiving the image expressing a latent image area with dots of a first dot size and the background area with dots of a second dot size, the first dot size being smaller than the second dot size;

an extracting step of extracting additional information that indicates whether the image is a copy or an original from the latent image area; and

a determining step of determining whether the image is a copy or an original on the basis of the extraction result.